**Compound Interest**

*Key Terms:*

|  |  |
| --- | --- |
| Crediting | The bank \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interest every single day, based on that day’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , but does not add the interest every day. Instead, they keep a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of interest earned and \_\_\_\_\_\_ it into the account monthly or quarterly.\_\_\_\_\_\_\_\_ common procedure in banks today is compounding daily and crediting \_\_\_\_\_\_\_\_\_\_\_\_\_\_.  |
| Annual Percentage Rate |  |
| Annual Percentage Yield | The \_\_\_\_\_\_ is the \_\_\_\_\_\_\_\_\_\_\_ interest rate it would take to give the same dollar amount of interest that the compounding gave.  |
| Compound Interest | With \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interest, the account earns interest on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, so the principal \_\_\_\_\_\_\_\_\_\_ any earned interest is used to calculate the interest. Each time interest is calculated the principal is slightly \_\_\_\_\_\_\_\_\_\_\_\_ than the previous time because of the \_\_\_\_\_\_\_\_\_\_ interest |

Interest can be compounded for different \_\_\_\_\_\_\_\_ periods.

|  |  |  |
| --- | --- | --- |
| **Compounding** | **# times per year** | **This is every \_\_\_\_** |
| Annual |  |  |
| Semiannual |  |  |
| Quarterly  |  |  |
| Monthly |  |  |
| Daily  |  |  |

Compound Interest Formula:



**Example 1:**

Marie deposits $1,650 for three years at 3% interest, compounded daily. What is her ending balance?

**Example 2:**

Kate deposits $2,350 in an account that earns interest at a rate of 3.1%, compounded monthly. What is her ending balance after five years? Round to the nearest cent.

**Example 3:**

Write an algebraic expression for the ending balance after *k* years of an account that starts with a balance of $2,000 and earns interest at a rate of 3.5%, compounded daily.

Annual Percentage Yield Formula

 NOTE: the starting amount does NOT matter!

Most banks advertise the APY. It is important to find out the APR as well as the APY on an account before you \_\_\_\_\_\_\_\_\_\_\_\_ it.

**Example 4:**

Barbara deposits $3,000 in a one year CD at 4.1% interest, compounded daily. What is the annual percentage yield (APY) to the nearest hundredth of a percent?

**Example 5:**

Spencer deposits $10,000 in a two year CD at 1.9% interest,compounded monthly. What is Spencer’s APY to the nearest hundredth of a percent?